



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Public Health Reports

Treasury Department, United States Marine-Hospital Service. Published in accordance with act of Congress approved February 15, 1893.

VOL. XIV. WASHINGTON, D. C., OCTOBER 20, 1899. No. 42.

UNITED STATES.

[Reports to the Surgeon-General United States Marine-Hospital Service.]

PLAN OF ORGANIZATION FOR SUPPRESSION OF SMALLPOX IN COMMUNITIES NOT PROVIDED WITH AN ORGANIZED BOARD OF HEALTH.—
BY P. A. SURG. C. P. WERTENBAKER.

[Supplemental to Marine-Hospital Bureau document "Précis upon the diagnosis and treatment of smallpox."]

The following pages have been written because there seemed to be a need for some such information by local authorities in their efforts to suppress smallpox. In many States, counties, and municipalities there is no health organization, and the details of managing an outbreak of smallpox come to the local authorities as a new problem. Having no experience in the management of the disease, valuable time and money are wasted by the authorities in trying to perfect an organization for the work. In order to aid such authorities the following suggestions are offered.

The plan herein suggested is intended more particularly for sections where no health organization exists. It is equally applicable to one case or many cases, to a small or a large territory. In either case the machinery and methods are the same, and one case of smallpox requires as careful handling as a thousand cases. In order to successfully suppress smallpox it is necessary to systematize the work, so that no essential point or measure shall be neglected.

The following form of organization having been frequently tested, and proved satisfactory, is recommended with such modifications as the necessities of each community may require. It has frequently been

used by officers of the United States Marine-Hospital Service for the suppression of smallpox, and with unfailing success.

It is essential that the entire management of the work of suppressing smallpox in a given territory, should be in the hands of one person. This individual should have military authority over all patients, suspects, and persons employed in the work. He should outline all measures and methods, and be responsible for their proper performance. He should therefore have authority to employ and discharge such persons as in his judgment seems best, and to authorize necessary expenditures. He should be designated as the "Officer in Charge" of smallpox work, and should receive the fullest support of the authorities.

From the above it will be seen that the person selected as officer in charge should be a man of good judgment, executive ability, and force of character. One who will do his duty without fear or favor, and whose sole object is the prompt suppression of the disease. His character should be above reproach. Fitness for the position should alone determine his selection, and political, social, or personal considerations should have no weight in the matter. It is always preferable to select a physician for this position if practicable. He should be well paid for his work, for his position will be a most trying one, and if he perform his duty faithfully he will earn his pay, whatever it may be.

The officer in charge having been selected, he should proceed to organize the following divisions: (1) Headquarters, (2) Inspectors and vaccinators, (3) Smallpox hospital, (4) Suspect camp or detention house, (5) Guards, (6) Disinfecting corps.

HEADQUARTERS.

One or more offices, centrally and conveniently located, should be selected as headquarters. Here some one should be on duty all the time, both day and night. In some of the smaller cities and towns an office in the police headquarters has been used satisfactorily. Some one is usually on duty here at all hours, and can receive and record all messages and reports.

A clerk should be on duty at headquarters at all times to record messages, answer questions, and keep the records. A messenger to carry messages and do odd jobs is essential. To the headquarters come all requisitions, requests, inquiries, etc., and from here emanate all orders, information, etc. Here the chiefs of divisions report, and from this office the entire work is managed and supervised. In order to more clearly indicate the detailed work of the headquarters, the following routine is given:

By 8 a. m. the officer in charge is at his desk; he has heard the report of the clerk, and read over the reports and records of the previous day; the chief of guards now reports, receives his instructions, and departs. Next the inspectors report. The officer in charge discusses

with each in turn, in the presence of the other inspectors, the work in his territory, and after having heard them all, assigns each inspector his territory, and outlines his work for the day. The amount of territory and the nature of the work of the inspectors varies with the period of the epidemic and the situation from day to day. In the first days of the work, when the inspectors are going over new ground, taking the names, etc., of the occupants of each house and vaccinating as they go, their territory will be smaller than later on when vaccination is completed, and the inspection is merely for the purpose of discovering any new case of smallpox that may have developed.

So as to the location of the territory ; after the city has been thoroughly inspected a few times, it will be found that the infected areas are defined, and they will require constant supervision, while other portions of the city are clean, and will only require an occasional inspection. After the inspectors have received their instructions, and depart for their respective territories, the disinfecting division reports through its chief. The work of this division for the previous day is reviewed and new work outlined. The chief disinfector takes a list of the infected houses that have been reported since the previous day, gets his instructions, and departs. By this time it is 9 o'clock a. m., and telephonic reports from the smallpox hospital and suspect camp have been received. These reports should be in some such form as the following :

SMALLPOX HOSPITAL, ——— ———, 1899.

Patients remaining at previous report, ———; patients received since previous report, ———; patients discharged since previous report, ———; patients died since previous report, ———; patients remaining at 9 a. m. to-day. Total, ———; will probably discharge to-day recovered, ———.

These reports are recorded in a book kept for that purpose.

The officer in charge usually has a short conversation over the telephone with the physician in charge of the smallpox hospital, and also with the one who is in charge of the suspects; he receives their requisitions for subsistence and other supplies, and has them recorded by the clerk. These requisitions are now sent to the grocer and others, with orders to deliver them at the hospital or camp as may be needed.

The officer in charge now has time to see the numerous people who are waiting to confer with him on various subjects. After having disposed of his callers, he goes out to inspect the work of the various divisions and arrange many matters that require his personal attention.

In the meantime at headquarters reports from the inspectors and others are beginning to come in, and are recorded by the clerk in a book kept for that purpose. This record is a sort of journal, and would read somewhat as follows :

March 9, 1898, 9.20 a. m. : New case at 597 North avenue ; name, John Smith, colored ; age, 29 ; first day of eruption ; has wife and 6 children in same house. Reported by Jones, inspector. (Note.—Sent ambulance for patient and wagon for suspects at 9.30.)

10.15 : Chief inspector says the 2 barrels of sulphur ordered yesterday have not arrived. Wishes to know what to do.

10.45: Brown, inspector, reports suspicious case at 42 Lake street, colored child, name, Watkins. (Note by officer in charge.) Referred case to Dr. Williams, who reports child has only a cold.

Between 5 and 6 o'clock the officer in charge is in his office again; the inspectors begin to arrive and make written and verbal reports of the work of the day. The names and addresses of persons who have refused to be vaccinated are recorded and a copy forwarded to the mayor or other officer for prosecution. The situation is discussed and summed up, showing what progress is being made in suppressing the disease, and work for the morrow is forecast. About this time the representatives of the newspapers will come in for information, and it is recommended that it be given them freely. Local authorities, fearing to injure the commercial interests of their community, frequently adopt the shortsighted policy of concealing the facts. This does the community far more harm than if the truth were told. When the number of cases, and the location of each is published daily, the public at large is kept fully informed of the true conditions, but where there is concealment it is at once said that the conditions are so bad that the authorities dare not let it be known. The number of cases is greatly exaggerated by rumor, and they multiply as the distance from the cases increases. It has been known that 3 cases, all quarantined in hospital, have been reported as 30 cases, and numerous deaths at a distance of 20 miles away. It is therefore recommended that the facts be frankly given to the newspapers each day. By 6 or 7 o'clock in the evening the work of the day at headquarters is practically over. Some one should, however, be kept on duty during the night, as frequently new cases are discovered after nightfall, and should have immediate attention.

INSPECTORS AND VACCINATORS.

It is usual to combine the duties of inspector with those of the vaccinator. Inspectors and vaccinators should be physicians, or at least advanced medical students. The reason for this lies in the fact that no one without some medical education is capable of deciding if a given individual has or has not a disease. Not only this, but also because vaccination is a surgical operation, minor it is true, but nevertheless one that should be performed with all aseptic precautions, a fact that is too often overlooked.

It is frequently asked how many inspectors should be allowed for a given territory. This is a question that can not be answered categorically, as so much depends upon the individual, the amount of work that he does, and the conditions that confront him. It is a good plan to secure the option of as many desirable men as possible, and then put on as many as experience shows to be needed. In making the first few inspections, when it is desirable to cover a large territory in a short time, it is well to put on a large number of inspectors, and then gradually reduce the number, weeding out the least desirable. In this way

you will soon have a picked corps of inspectors, trained to their work, and who can be trusted.

In organizing this division, the inspectors should be called together, and the situation discussed, and a general policy and method of work outlined. Written general instructions should be given each inspector, and he should be furnished with a certificate, signed by the officer in charge and the proper local authorities, stating that the said inspector has been appointed "inspector and vaccinator," and that he is empowered to execute the sanitary laws and ordinances. The inspectors should now be made thoroughly familiar with all the symptoms of smallpox, and the diseases from which it should be differentiated.

It is well to read to them, from some modern standard text-book all that is written on the said diseases. It is well, also, to furnish them with an abstract of the principal diagnostic points of smallpox, especially in its earlier stages. The "Précis on the diagnosis and prevention of smallpox," issued by the United States Marine-Hospital Service, gives all this information in a convenient form. Copies of this précis can be obtained, free, on application to the Surgeon-General, United States Marine-Hospital Service, at Washington, D. C. It is well to show your inspectors several cases of smallpox in different stages of the disease. It should be unnecessary to add that your inspectors should be immune to smallpox, either by having had the disease, or by thorough vaccination. After being sure that your inspectors are capable of recognizing smallpox when they see it, you should teach them how to vaccinate.

Use nothing but glycerinized lymph. Glycerin lymph can be obtained almost anywhere.

A successful vaccination is one that shows first a vesicle, and then a pustule, with an umbilication, and *has an inflammatory zone extending for an inch or more around its base*. The scab usually falls in about twenty-one days.

As a rule a vaccine vesicle requires no treatment. A clean, soft linen bandage may be put over it to protect it from the rubbing of the clothes. Ointments, lotions, etc., are, as a rule, harmful. Avoid the use of shields, especially those made of felt, such as are usually sold at druggists. The wire shield is much less objectionable. A ribbon, with the word *vaccinated* printed on it, and worn around the outside of the coat sleeve, is sometimes of use in protecting against the assaults of one's friends.

What class of cases should be exempt from compulsory vaccination? The writer is of the opinion, personally, that only 2 classes should be exempt—those who are dead and those who have had smallpox. There may be individual cases where the physician may consider it inadvisable to vaccinate at the time, but unless the physician has some very definite reason against it, he should vaccinate. A good rule is, "When in doubt, vaccinate."

The question of the value of a good scar in protecting the individual

against smallpox is often met with. One is frequently confronted with the question "Is it necessary for me to be vaccinated? I was vaccinated a certain time ago, and have a good scar." In reply to such an inquiry, it should be advised that the individual be vaccinated, because *if he is immune the vaccination will not take, and if it does take, it shows that he was not protected.* No one can say how long the immunity of even a perfect vaccination will last in a given individual; the time varies very largely in different people; some who have been well vaccinated in childhood will never take, no matter how often they are vaccinated; others will take almost every time they are vaccinated. Therefore, to be on the safe side, advise the vaccination of every person who has not had smallpox.

Whenever there is a difference of opinion between a vaccinator and a person to be vaccinated, as to the propriety of his being vaccinated, the matter should be referred to the officer in charge or to the board of health.

Having instructed your inspectors on the above points, each should be supplied with a book, ruled for the following information:

Number, name, color, sex, age, address, date when first seen, date of vaccination or revaccination, successful or not, and remarks.

The inspector now goes to the first house in his district and inquires who lives there, the number of persons occupying the house, their names, and other information according to the ruled columns of his book, noting the same in their proper places. He should now carefully inspect each person living in the house, satisfying himself that each one is perfectly well, and if not, then the nature of the trouble. If, as frequently happens, any one is absent, he should make careful inquiry as to his whereabouts, and the hours when he is to be found at home, and then see that individual as soon as possible. Every person absent under these circumstances should be "suspicious" until found and noted.

The vaccinator should now proceed to vaccinate all persons in the house, with the exceptions noted above, recording the fact in his book. By the end of his second inspection of a district, the inspector should have the name and address of every person living in his territory, and should have personally inspected all of them, with but few exceptions, and those being persons who are away from home, at work, etc., and these should be inspected without delay, going to their places of business if necessary.

He should see every person in his territory at least once in every three days, in order to be sure that no new cases of smallpox develop without being discovered. Each inspector should be accompanied, if possible, by a policeman in uniform.

A policeman is of great assistance to an inspector, especially in certain districts of the city where nothing but a policeman commands respect. He can also keep watch on the outside of the house, while the

inspector is on the inside, to see that no one escapes from the house, and thus avoids inspection. In the event that a case of smallpox is found in a house, the policeman stands guard to prevent the escape of exposed persons, until they can be removed to the suspect camp. The policeman is also of use in protecting the inspector from violence, which is too often offered him. Upon the discovery of an actual or suspicious case of smallpox, the inspector, leaving the policeman on guard, goes to the nearest telephone, and informs headquarters of his find, giving name, age, color, and house address of the patient. The responsibility of the inspector and policeman do not end until the case and suspects have been safely delivered to the hospital, or suspect camp.

At the end of each day the inspector should report at headquarters and write out a report, giving the number of houses visited, number of persons inspected and vaccinated, and such other information as may be necessary. He should also make a verbal report to the officer in charge as to the general conditions in his territory. The thoroughness with which the inspectors do their work will have much to do with the prompt suppression of the disease. The inspectors are the eyes of the officer in charge.

GUARDS.

Guards are needed for the smallpox hospital, suspect camp, and for cases quarantined at their homes. Their number and hours of duty must be determined by the circumstances in each case. In general, it may be said that the smallpox hospital and suspect camp should be thoroughly guarded, day and night, and the tour of duty of each guard should be from eight to twelve hours during the twenty-four. There should be a chief and an assistant chief of guards, who divide the duty of the twenty-four hours between them, one of them always being on duty. The guards should be inspected at frequent and irregular intervals to see that they are properly performing their duty.

Any guard found asleep on post or disobeying orders, or otherwise neglecting his duty, should be promptly disciplined. The chief of police is frequently utilized as chief of guards, and the arrangement is usually satisfactory.

SMALLPOX HOSPITAL.

It will not be practicable here to enter into all the details of the equipment and management of a smallpox hospital, but the essentials will be given. The number of cases, the local conditions, and other circumstances will modify the details for each community.

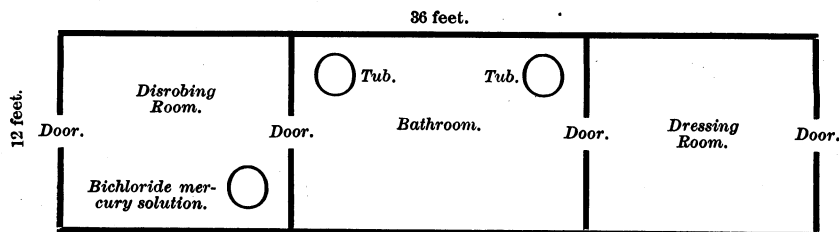
Primarily, the hospital must be under the management of a physician who should be quarantined with the patients if possible, and should hold no direct communication with the outside world. If this is not practicable and the physician has to live on the outside of the hospital, he should exercise the greatest care that he does not convey the infection from the patients. Elsewhere are given the precautions that should be observed in order to prevent carrying the infection. As stated

before, the number of cases and other circumstances modify the details, but the following are essentials:

A building or buildings capable of holding all the patients that are liable to be sent to it should be secured. The location of the hospital is important. It should be somewhat remote from other buildings, but close enough to the city to be easy of access for the transportation of patients, supplies, etc. A distance of 100 yards from other buildings or the roadway is sufficient. There must be at least 2 wards—1 for men and 1 for women. In the South, where race feeling is strong, it will be well to have 2 hospitals—1 for white and 1 for colored patients—duplicates of each other. If more convenient, tents can be used. The hospital need not be an elaborate affair—a single story building, with a ridge roof about 20 feet wide, and of sufficient length to give all the room needed, with a transverse partition dividing it into 2 wards. The material can be rough pine lumber, 1 inch thick, and the building roofed with tarred paper; this is all that is usually needed. In colder climates in winter it may be necessary to cover the outside with paper, and possibly to sheathe with rough boards, to make it warm enough. The wards can be heated when necessary by stoves and lighted as is most convenient. Electricity is preferable, but hanging kerosene lamps are generally used. A kitchen and dining room should be built in the same way. A bountiful supply of water must be furnished. If practicable, city water should be piped to the hospital; but if this is not possible, then there should be a good spring or well near at hand and within the inclosure. The hospital should be located on a hill, with many shade trees and as much grass as possible.

A barbed wire fence, closely strung, should surround the hospital at a distance of 200 feet at the nearest point. There should be but one entrance to this inclosure, and that should be provided with a gate, and carefully guarded. Near the gate, and inside the inclosure, should be a small building for the use of the guard in stormy weather, and it should have a room in which the physician can change his clothing, etc. This building should contain a telephone, connected with the general telephone system of the city.

If the physician is quarantined with the patients, he should live in a tent, or a small rough house, built for that purpose. Not far from the gate, and on the opposite side from the guard's house, and nearer the hospital, say 100 feet from the hospital, should be a bath house, consisting of at least three rooms. The following diagram gives a very simple but effective arrangement:



This bath house is intended for the disinfection of patients prior to being discharged from the hospital. The details of this disinfection will be given later in their appropriate place.

Latrines, or earth closets of sufficient size, should be built at a convenient distance from each ward, and the excreta carefully covered with dry earth and unslaked lime. The wards should be furnished with cots, without mattresses. It is not necessary to supply bedclothing, as when a patient is brought to the hospital his bedclothing should be brought with him. As this clothing has frequently to be burned anyway, after the case is well, it saves expense to have the patient use it in the hospital. This plan also obviates the possibility of any complaint as to the quality. A blanket or two spread on the cot makes a more desirable bed than a mattress, and is more easily disinfected. A few chairs, several wooden settees or benches, and a few wooden tables constitute the ward furniture.

Dark-colored roller window shades should be put at the windows, and a large faced nonstriking clock will add much to the comfort of the patients.

Adequate arrangements for personal ablutions should be made. A tin basin, a towel or so, and a piece of good soap for each patient, to be used only by that patient, is a satisfactory arrangement.

The kitchen must be completely equipped with cooking stove, utensils, etc., and in summer a large refrigerator, and a bountiful supply of ice must be supplied.

A portion of the kitchen building should be partitioned off for a subsistence storeroom, and another room for other supplies.

The hospital force should not consist of less than the following, and this number should be increased as the necessity arises: One physician in charge, 2 nurses, 1 for each ward, 1 cook, 1 assistant cook, 1 or 2 dining room waiters and helpers, 1 general utility man.

All of these should be smallpox immunes from having had the disease, if possible, otherwise they should be thoroughly vaccinated. It is frequently possible to secure good helpers from among the recovered patients.

The physician should always keep on hand a small supply of drugs, liquors, etc.

The telephone in the guard's house should be the means of communication with the outside world. Supplies should be inquired for at 9 a. m. daily at headquarters. When the supplies arrive they should be deposited at the gate by the driver and left; the guard now takes them and deposits them at a designated spot within the inclosure, from whence they are taken to the hospital by the utility man, the guard having retired to the gate. A small shed to cover the supplies will be of use in protecting them from the sun and rain. A megaphone or tin horn will be of service in calling the utility man. The guard must under no circumstances approach the hospital nearer than 100 feet.

No person except the patients, physician, and guards must be allowed to enter the inclosure, and no person or article be allowed to leave it until after a thorough disinfection by one of the methods given later.

The hospital should be supplied with a vehicle that can be used as an ambulance to transport patients to the hospital. The ambulance should be driven by an immune, and he should change his clothing before leaving the hospital.

No patient should be discharged from hospital until all scaling of the skin has ceased, and the skin is perfectly smooth. For several days before discharge it is well to require the patient to take a bath, once or twice daily, and to rub the skin thoroughly with vaseline or some similar substance.

Red spots, where pustules have been, will frequently persist for a long time, but these do not convey infection if the skin is perfectly smooth.

When a patient is ready for discharge, he should go into the disrobing room of the bath house, remove all the clothing that he has worn in the hospital, and drop them into a tub containing a solution of bichloride of mercury, 1-1000. He then passes into the bathroom and thoroughly washes himself with soap and water, especial care being taken to see that the hair is thoroughly cleaned. He now takes a thorough bath in a 1-1000 solution of bichloride of mercury, and, having dried himself, passes into the dressing room. Here he finds sterile clothing that has previously been disinfected. He dresses himself and proceeds to the guard's house, where he receives his certificate of discharge from the physician, and departs without having reentered the hospital or having come in contact with any infected person. This certificate should give the name, age, color, sex, and address of the patient, date of discharge, and should state that his (or her) clothing has been thoroughly disinfected, and he (or she) is free from infection or the danger of conveying the same.

In the event that a patient has but one suit of clothes, it is not necessary to supply him with a new suit, as his old clothing can usually be disinfected as follows:

On the day previous to his discharge, supply the patient with a suit of overalls, if a man, or a gown, if a woman, and require him to go some distance from the hospital, and with soap and water thoroughly wash his clothing, underclothing, etc. His shoes, hat, etc., should be dipped in a solution of bichloride of mercury, 1-1000. After thoroughly washing all his clothing, each piece should be dipped in the solution of bichloride of mercury and hung in the sun to dry. On the morrow, when these clothes are dry, the guard takes them and puts them in the dressing room of the bath house, where they are ready for the patient after he takes his bath, and is ready to be discharged.

Letters and other articles that would be injured by being wetted, may be disinfected by sulphur, burned in a closed place, in the proportion

of 5 pounds to each 1,000 cubic feet of air space, and left therein for 24 hours; or, what is more convenient, place them in a close box, sprinkle them with formalin solution, and let them remain for six hours.

If the physician can not be quarantined at the hospital with the patients, then he must exercise the greatest care that he does not convey the infection, and what is almost as important, does not seem to convey it. When visiting the hospital he must always be careful to change his clothing before entering, and again as soon as he comes out. In other words, he must never enter the hospital with the same clothing that he wears when he mingles with the public. When he goes to the hospital, he should put on a suit of overalls, and when he comes out of the hospital he should make the circuit of the bath house in the same manner that a patient does when he is discharged.

Doubtless many other details will suggest themselves to the physician when he gets his hospital established, but enough has been said to enable him to make a successful beginning. Do not call the smallpox hospital a "pesthouse." Many patients are willing to go to the "smallpox hospital" who would object most violently to going to the pesthouse.

SUSPECTS AND SUSPECT CAMPS OR HOUSES.

By a suspect we mean a person who has been exposed to infection, and is liable to develop the disease.

Among the most prolific sources of the spread of smallpox are the persons who, having been in contact with the disease, scatter to their homes, and there develop the disease, thus establishing new foci of infection. In order that this source of danger may be eliminated, it is necessary that all persons who have been exposed to infection shall be disinfected, vaccinated, and isolated, for a period covering the incubation of the disease. This is best done in a suspect camp or detention house.

When a case of smallpox is discovered care should be taken not to announce the fact until provisions have been made to prevent the escape of persons who have been exposed to the infection. As a rule, and this is especially true of negroes, as soon as it is known that a case of smallpox exists in a house there is a stampede of the inmates, and if they are not prevented they will scatter all over the city, and it will be impossible to find them.

As soon as possible after notification of the existence of a case of smallpox at a given place headquarters orders the suspect wagon to the house, and all suspects are removed to the suspect camp. They are accompanied by the policeman (who was left there on guard by the inspector) for the purpose of preventing the escape of any of them on the way. The house should be locked and sealed as soon as the case of smallpox and the suspects are removed. A placard with "SMALLPOX" in large letters, printed on it, and bearing a notice signed by the board

of health or the officer in charge, warning all persons under the penalties of the law from entering or disturbing said house until the card is removed by the proper authorities should be placed on the house. The card should be removed by the disinfecting division only after the house has been disinfected and is thoroughly safe.

The suspect camp or house is built very much like the smallpox hospital, and it is managed in much the same manner. It is called a camp because most frequently tents have been used to contain the suspects, rather than a house, but the one is as good for the purpose as the other. As all the persons under detention are supposed to be well, they do not require the attention that is needed by the smallpox patients. If buildings are used, they should be of the same kind and number as noted for the smallpox patients, and equipped and run in the same manner.

The suspect camp should be in charge of a physician, but it is not necessary that he be quarantined with the suspects. The suspect house or camp is usually located near the smallpox hospital for economy, and ease of administration. It should be also surrounded by a wire fence, and one set of outside guards can guard both the camp and the hospital.

When suspects are brought to the camp, they are sent through the bath house, and on emerging therefrom, the men are given overalls and slippers, and the women gowns and slippers, to wear until their own clothes can be disinfected and returned to them. In cold weather it may be necessary to supply each suspect with a blanket, in addition to the above. After the suspects have been disinfected they should be vaccinated, and then detained for fourteen full days. The clothing of each suspect should be tied into a loose bundle, and tagged with the name of the owner. It should now be disinfected by one of the methods given. As a rule, disinfection by sulphur or formaldehyd will be the most convenient. The suspects should be disinfected, and given sterile clothing before being allowed to go into the house or camp. Each suspect should be detained fourteen full days from the date of disinfection, not counting the day of admission or the day of discharge. This plan is safe, and safety is our aim.

A record should be kept, giving the name, age, color, sex, date of admission, and date of discharge of each suspect, with his address and other information of note. No suspect should be discharged under fourteen full days after disinfection, and if in the course of his detention a case of smallpox breaks out in the suspect camp, all suspects who have come in contact with it or who have been liable to infection, should be at once disinfected again and detained for fourteen days from the date of the last disinfection, and the quarters carefully disinfected. Be careful not to discharge a suspect under the fourteen full days. It has been known that suspects who were discharged after twelve days' detention, have developed smallpox on the fourteenth day. That suspects discharged on the morning of the four-

teenth day have had the initial chill of smallpox on the same afternoon. It has also happened that suspects who were detained fourteen full days, but whose clothing had not been disinfected, developed smallpox a few days after their discharge, showing that they were infected by the clothing of themselves or some other suspect. Therefore, disinfect the person and the clothing, vaccinate all suspects, and detain them in quarantine for the full fourteen days, not counting the day of admission or discharge, thus making sixteen days' detention.

Suspects should be inspected at least once daily, and better twice daily. At a certain hour require all suspects to form in line in front of their quarters. The physician should go slowly down the line and carefully inspect each one. If anyone does not seem to be perfectly healthy, take that case aside for a more extended examination.

Should one of the suspects develop any symptoms of smallpox, he should be at once isolated and kept apart from the rest of the suspects until the nature of his trouble develops. For this purpose it is well to have a tent or small house within the inclosure where such cases can be isolated. It is well also to provide a place where suspects suffering from noncontagious diseases can be treated, for you may have cases of ordinary sickness develop among them, and in fact you are very liable to have such cases.

Before a suspect is discharged he must make the circuit of the bath house, and go through the same form of disinfection as to person and clothing as a patient in the smallpox hospital. He should also be given a certificate of discharge similar in form to the certificate given patients discharged from the smallpox hospital. The suspect camp should have a wagon, with a driver in charge, always at the camp for the purpose of bringing in the suspects, and their bedding, clothing, etc.

DISINFECTING.

This is one of the most important of the divisions, and its work must be thoroughly done if a recurrence of the disease is to be avoided. This division should be in charge of a competent, level-headed man, preferably a physician, who will give the most careful attention to the details.

The duties of this division are to thoroughly disinfect all infected houses, articles, etc. The various methods of disinfecting will be given hereafter, and it depends on which method is used as to the appliances necessary. Disregarding for the moment the more expensive method of disinfecting by formaldehyd, we will consider what is needed for disinfection by sulphur and bichloride of mercury, the methods usually most available. Whatever means are used, it will be necessary to have one or more large farm wagons, each drawn by 2 mules, for the purpose of transporting the outfit from house to house.

For disinfection by sulphur we need 6 or 8 large iron pots, each capa-

ble of holding about 15 gallons, an equal number of wooden washtubs, several barrels of roll sulphur, a 5-gallon oil can filled with alcohol, about 20 pounds of raw cotton for stuffing cracks, a pot of paste with a large brush, several old case knives, and a number of old newspapers. The paste and papers are used to close openings, such as the fireplace, which can not be closed by stuffing with cotton. The knives are for pushing the cotton into the cracks. It is necessary that the cracks should be well closed. Proceed with the disinfection as described under that head.

For disinfecting with bichloride of mercury we will need several empty oil or whisky barrels, a good sized force pump, and some 300 feet of rubber hose in 50-foot lengths [see that the hose fits the pump, otherwise it will be useless]; about 50 pounds of bichloride of mercury, and several agate-ware measures for making up the solution. In disinfecting with the bichloride solution, the disinfectors should wear rubber boots and coats, old broad-brimmed hats, and it is well to protect the eyes by glasses from the flying spray. The method of disinfecting is given under its appropriate heading.

The following are the methods of disinfecting :

Disinfection of articles.—(a) Mattresses, pillows, quilts and other articles that can not be readily disinfected should be burned.

(b) All articles that will stand boiling should be boiled for at least one hour. A handful of washing soda should be put in the water in which the clothes are boiled. After boiling, the clothes should be rinsed in clean water and dried in the sun.

(c) Articles that can not be boiled should be dipped in a solution of bichloride of mercury (1-1000), and dried in the sun.

(d) The furniture should be thoroughly washed down with the bichloride solution.

Disinfection of the house.—If a hut or shanty and of small value, it should be burned; otherwise it should be disinfected by one of the following methods:

If the house is close and will retain the gas it can be disinfected by either formaldehyd or sulphur dioxide. If it is too open to admit of disinfection by this means it must be washed down with a solution of bichloride of mercury 1-1000.

(a) *Disinfection by formaldehyd.*—All openings, and especially those around windows and doors and the fireplace, should be closed by stuffing with cotton or some similar material, or by pasting paper over the cracks. The formaldehyd is usually introduced through the keyhole of the door in amount equal to 4 per cent of the volume of the air in the room, and the room left closed for not less than six hours. As formaldehyd requires the use of a generator, it will probably be more convenient generally to use sulphur.

(b) *Disinfection by sulphur.*—Close house as above, with the exception

of one door, for each room to be disinfected, and in each put a tub of water; in each tub put an iron pot capable of containing double the amount of sulphur required. Put in each pot sulphur enough to give 5 pounds for each 1,000 cubic feet of air space. Pour on a small amount of alcohol; see that the sulphur is thoroughly ignited, then leave the room; close the door and stop all the cracks. Leave the room closed for twenty-four hours.

(c) *Disinfection by bichloride of mercury solution.*—If the house is too open to admit of disinfection by the above-mentioned gases, it must be thoroughly washed down with a solution of bichloride of mercury (1-1000). Every portion of the room should be thoroughly wetted with the solution, and the room should not be occupied for twenty-four hours. The doors and windows should be kept open to facilitate drying.

SMALLPOX IN COUNTRY DISTRICTS.

While the foregoing remarks have been made with especial reference to smallpox in cities and towns, they are equally applicable to country districts. Because the territory is extended, and the population scattered, is no reason why any of the precautions should be relaxed; on the contrary they should be increased. It is so much easier for smallpox, especially the mild type of the present epidemic, to escape notice in the country districts, than in a town.

If an eruptive disease appears in a country district, it is the duty of the authorities to learn the nature of that disease, and if it seems contagious, it should be isolated. If a doubt exists, an expert should be called to settle the diagnosis. All cases of so-called "chickenpox," "Cuban itch," "elephant itch," "nigger itch," and the like, should be at once isolated; in nine out of ten cases these prove to be smallpox.

Another point that is sadly neglected in country districts, is vaccination. This is partially due to apathy on the part of the authorities, and partially to the prejudice that exists among the people against vaccination. This prejudice is the result of ignorance of the true facts, and to the alarming rumors in circulation as to the results following vaccination. Rumors of arms, legs, or life lost as the result of vaccination, have, as a rule, no foundation in fact.

It is true that within the past year or so, with the use of the "dry point" for vaccination, there have been a number of badly inflamed arms, that have persisted for some time, but this has been due to impure virus, or to some extraneous cause. With the use of glycerinized lymph no such trouble occurs. From the reports of a good many thousand vaccinations with the glycerinized lymph, there have been only a few extremely inflamed arms, and it is by no means certain that these were due to the vaccine virus.

If these facts are explained to the people by some one in whom they have confidence, much of the opposition to vaccination will disappear.

Without thorough vaccination it is almost impossible to suppress smallpox, therefore the authorities in country districts are urged to give this their earliest attention.

If vigorous measures are taken to isolate the first cases of smallpox and all exposed persons, and all infected houses and articles are promptly and carefully disinfected, and vaccination is thorough, the suppression of the disease is an easy task.

IN CONCLUSION.

It is advised that whatever measures are adopted they should be made thorough.

Measures, good or bad, half done are worse than useless, as they give a fancied security.

Smallpox can not be suppressed without the expenditure of money.

The more promptly you act the less it will cost.

When in doubt act on the safe side.

Finally, the following motto is offered for your banner in smallpox work :

“ISOLATE, VACCINATE, DISINFECT.”

Yellow fever in Key West, Fla., and other places.

[Continued from last PUBLIC HEALTH REPORTS.]

FLORIDA.

Key West.—Surgeon Murray reports October 16, as follows: October 11, 18 cases; October 12, 7 cases, 2 deaths; October 13, 23 cases; October 14, 10 cases, 3 deaths; October 15, 9 cases; October 16, 15 cases.

LOUISIANA.

New Orleans.—Surgeon Carter reports, October 16, 1 new case; weather hot. October 17, no new cases, no deaths.

Steamship Armstor, for Philadelphia, with a case of yellow fever on board.

On information received from the health commissioner, Baltimore, Md., Passed Assistant Surgeon Thomas at Reedy Island Quarantine, Del., was telegraphed, October 6, as follows:

Steamer *Armstor* from Baltimore for Philadelphia to-day; recently from Jamaica and Santiago; 1 of crew in Baltimore with suspected yellow fever; inspect critically, and, if necessary, disinfect.

On October 8, the following telegrams were received from the health commissioner, Baltimore, Md.:

October 8: Man died 4 o'clock this morning. Post-mortem to-day. Do you wish to send one to see it?—C. HAMPSON JONES, M.D.

October 8: P. M. this afternoon. Everything points to yellow fever.—C. HAMPSON JONES, M.D.